

Visualization Tool for Electric Vehicle Charge and Range Analysis

1. INTRODUCTION

1.1 Overview

To visualize the dataset relates to electric vehicle charge and analysis its range towards electric motor instead of combustion engine. A vehicle that can be powered by an electric motor that draws electricity from a battery and is capable of being charged from an external source.

The electric vehicle is not new, but it has been receiving significantly more attention in recent years. Advances in both EV analytics and battery technologies have led to increased automotive market show. However, this growth is not attributed to hardware alone. The modern mechanic and electronic vehicles marries electrical storage and propulsion systems with electronic sensors, controls, and actuators, integrated closely with software, secure data transfer, and data transfer and data analysis to form a comprehensive transportation solution: advances in all these are have contributed to the overall rise of EV's but the common thread that runs through all these elements is data analytics

The new EV's are combined electrical storage and propulsion systems with electronic sensors, controls, actuators, integrated closely with software secure data transfer from comprehensive transportation solution.

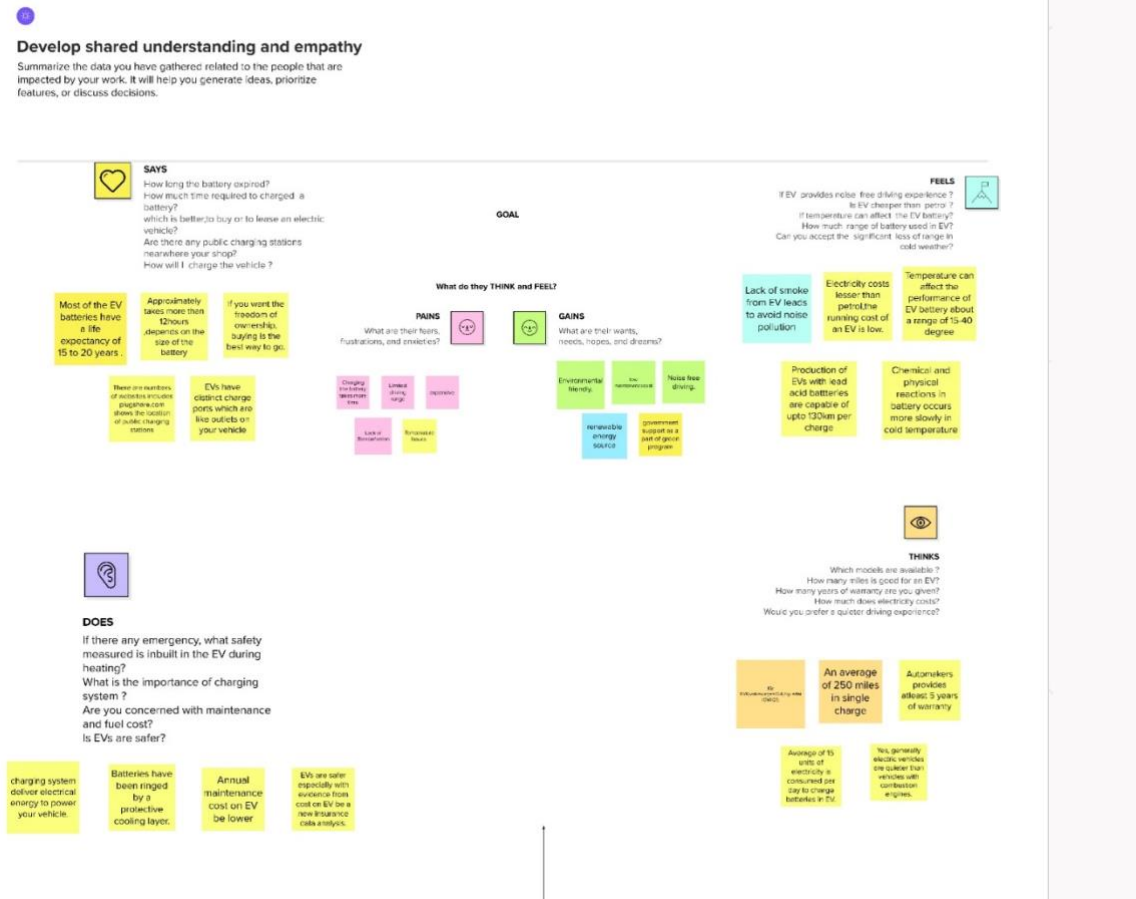
1.2 Purpose

The purpose is to gain insights and analysing the performance and efficiency of electric vehicle through data visualization techniques. It is used to solve the biggest issues in EV market, and it provides the insights for the people who are using the EV to enter in EV market. The achievement of the analysis of EV through data visualization can help people quickly identify various patterns, trends, brands.

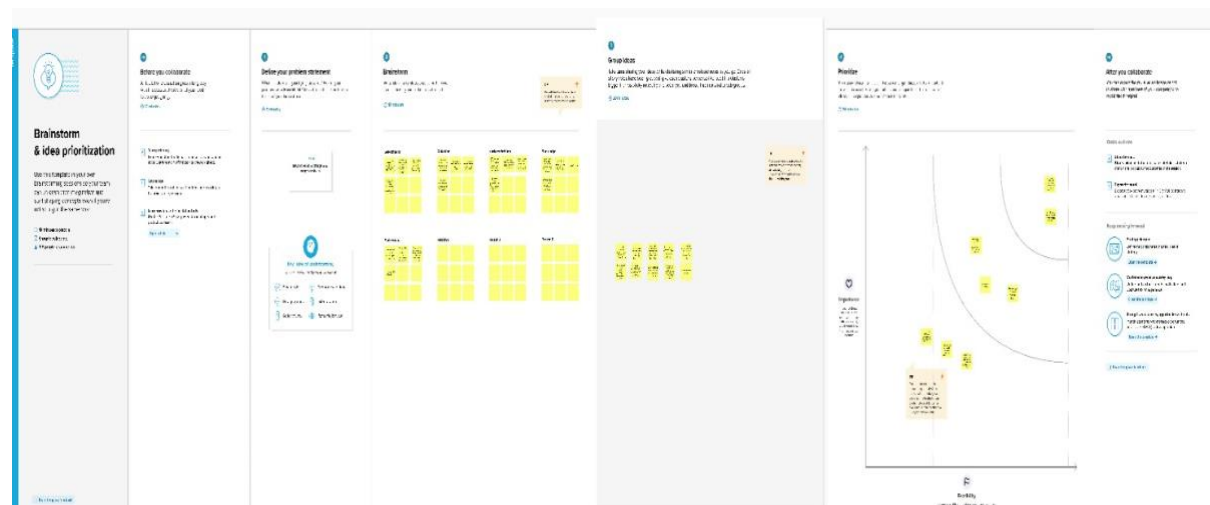
2. PROBLEM DEFINITION & DESIGN THINKING

The empathy map and Ideation & Brainstorming prepared by Mural template, they are;

2.1 Empathy map



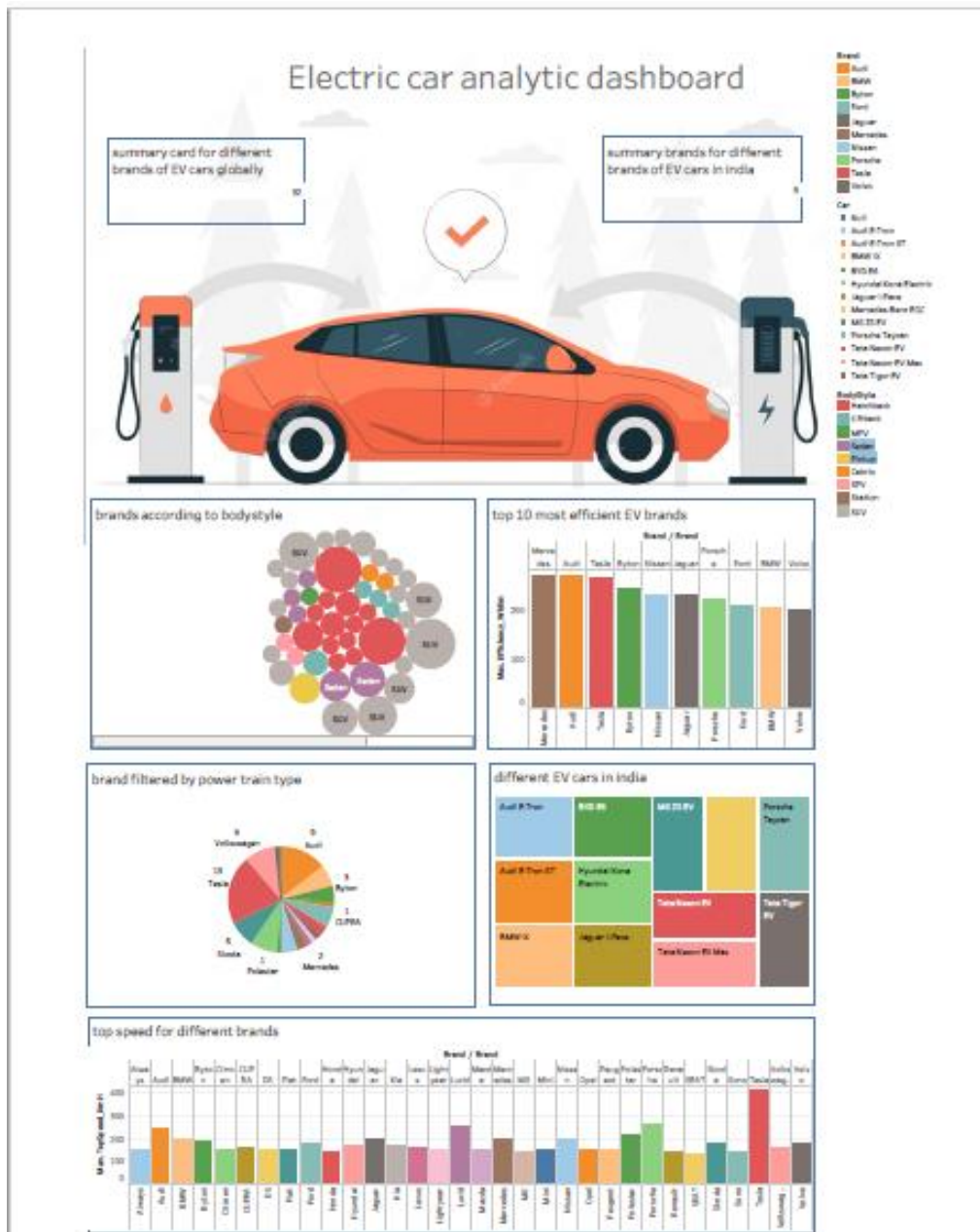
2.2 Ideation & Brainstorming Map



3. RESULT

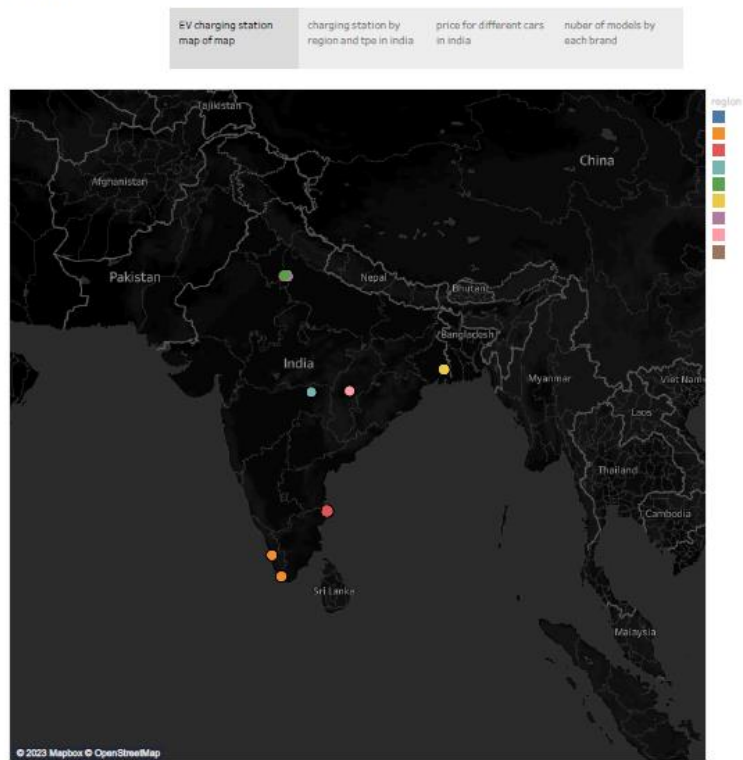
The results contain the dashboard, story, and web integration:

Dashboard

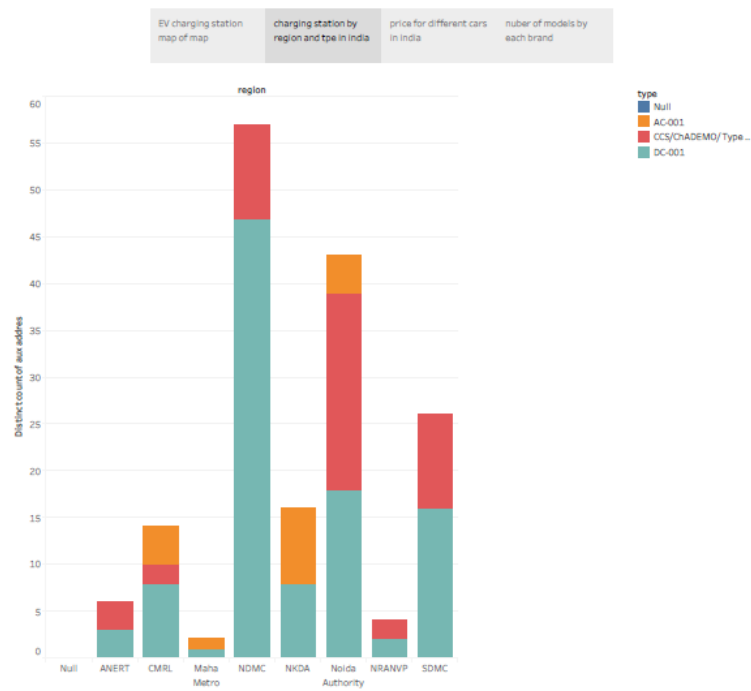


Story

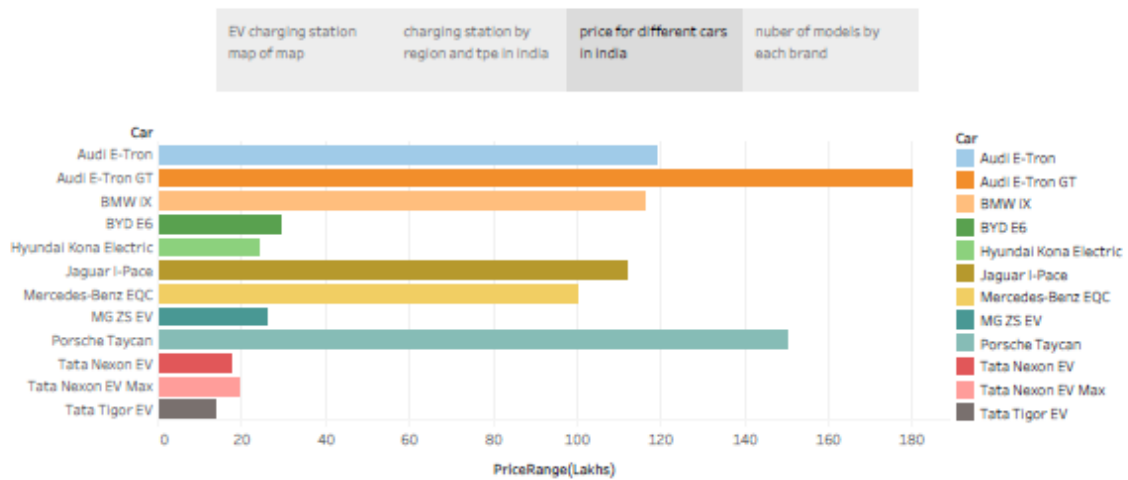
Story 1



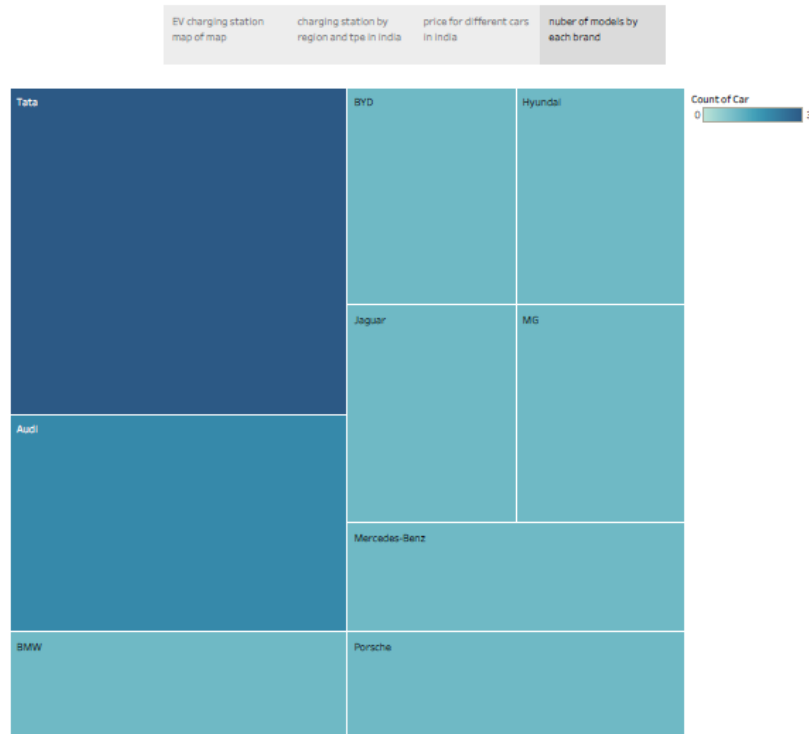
Story 1



Story 1



Story 1

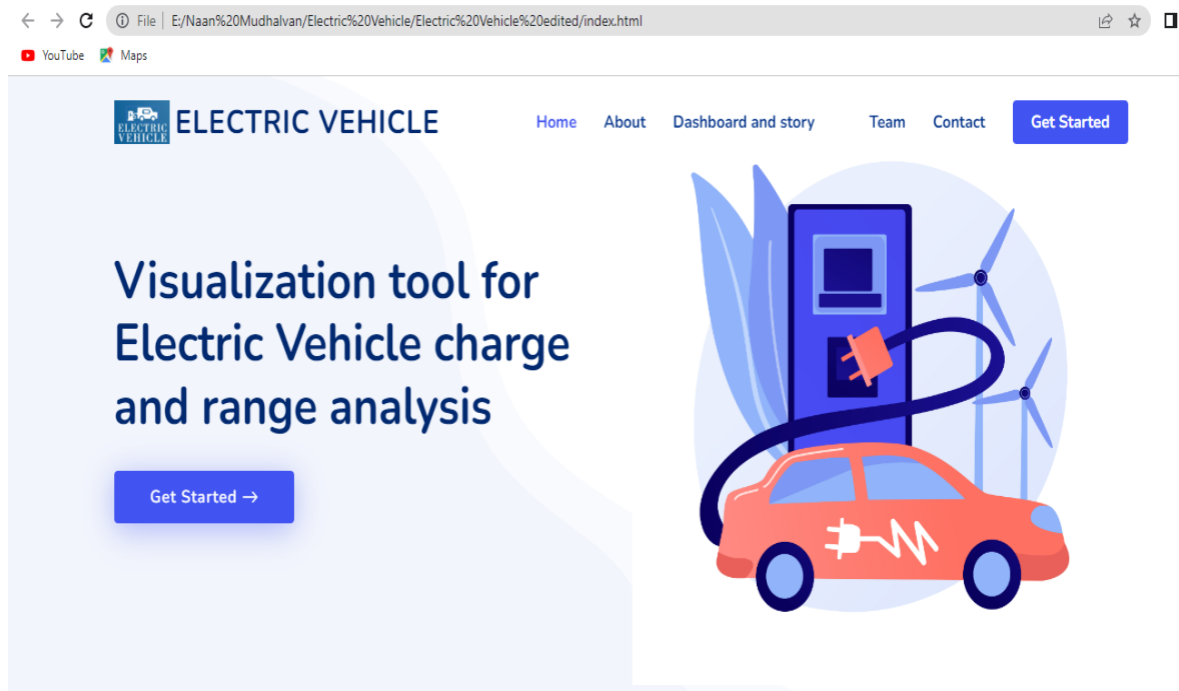


Web Integration

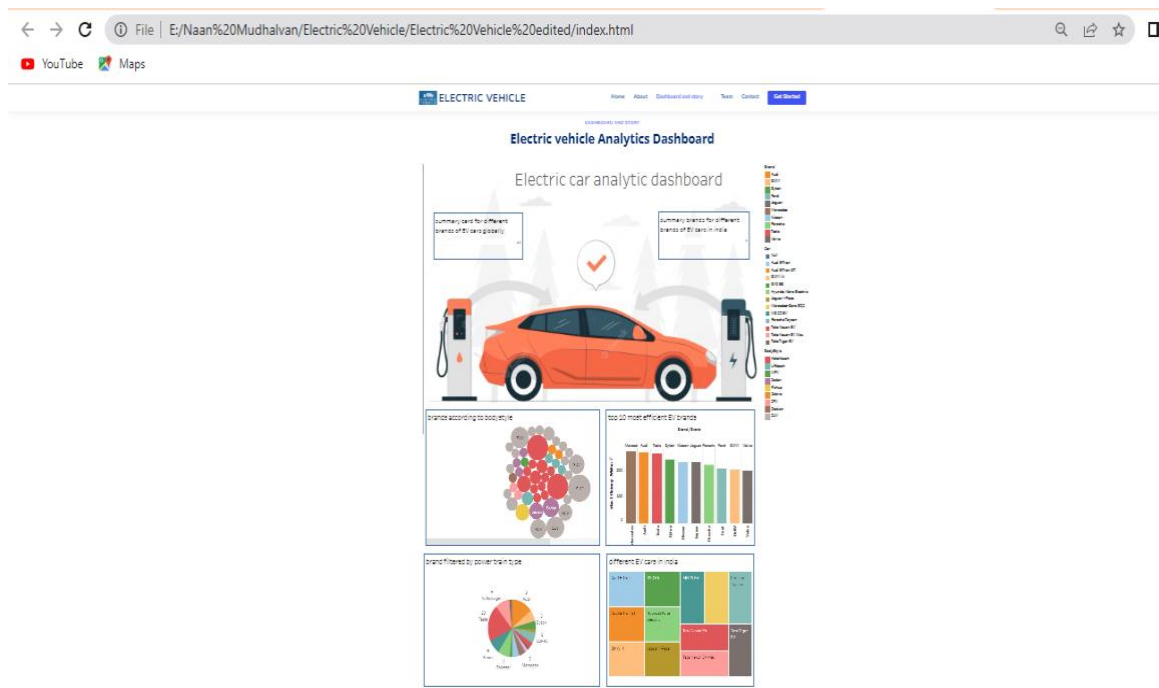
The result of the project is integrated with the website the link is:

<https://chinna-03.github.io/visualization-tool-for-electric-vehicle-charge-and-range-analysis/project.html>

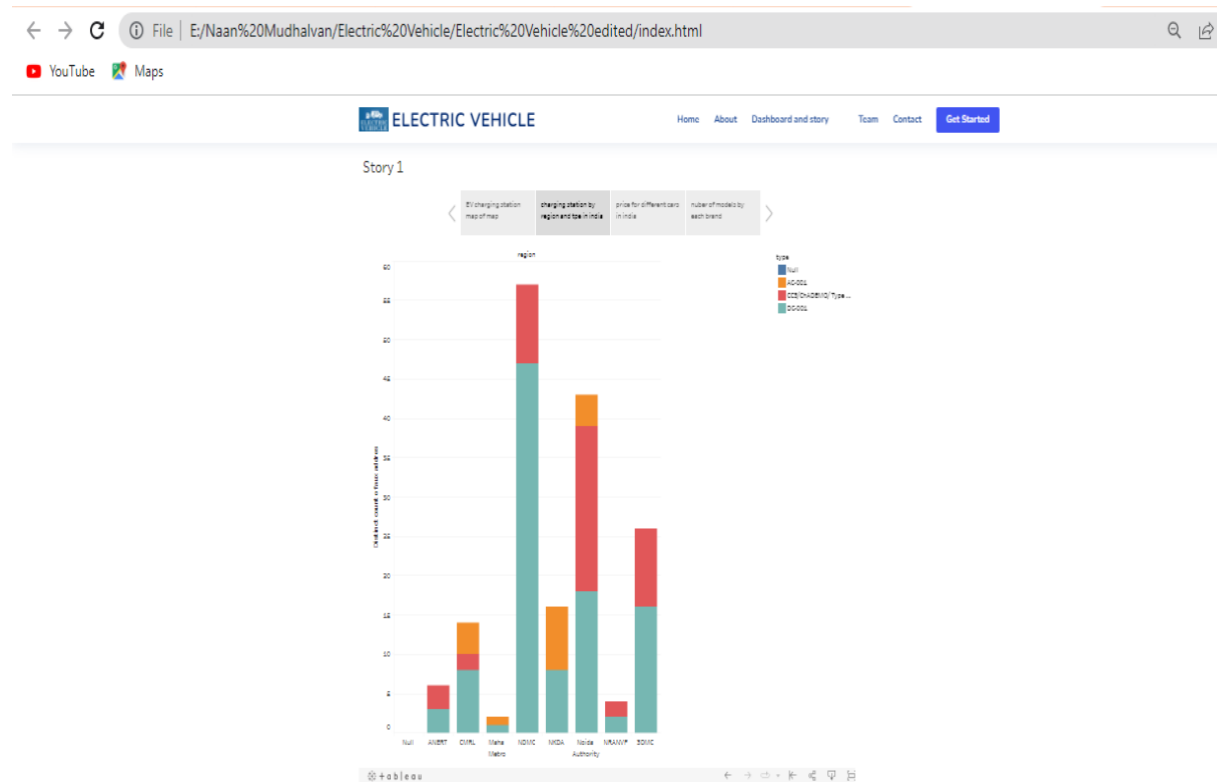
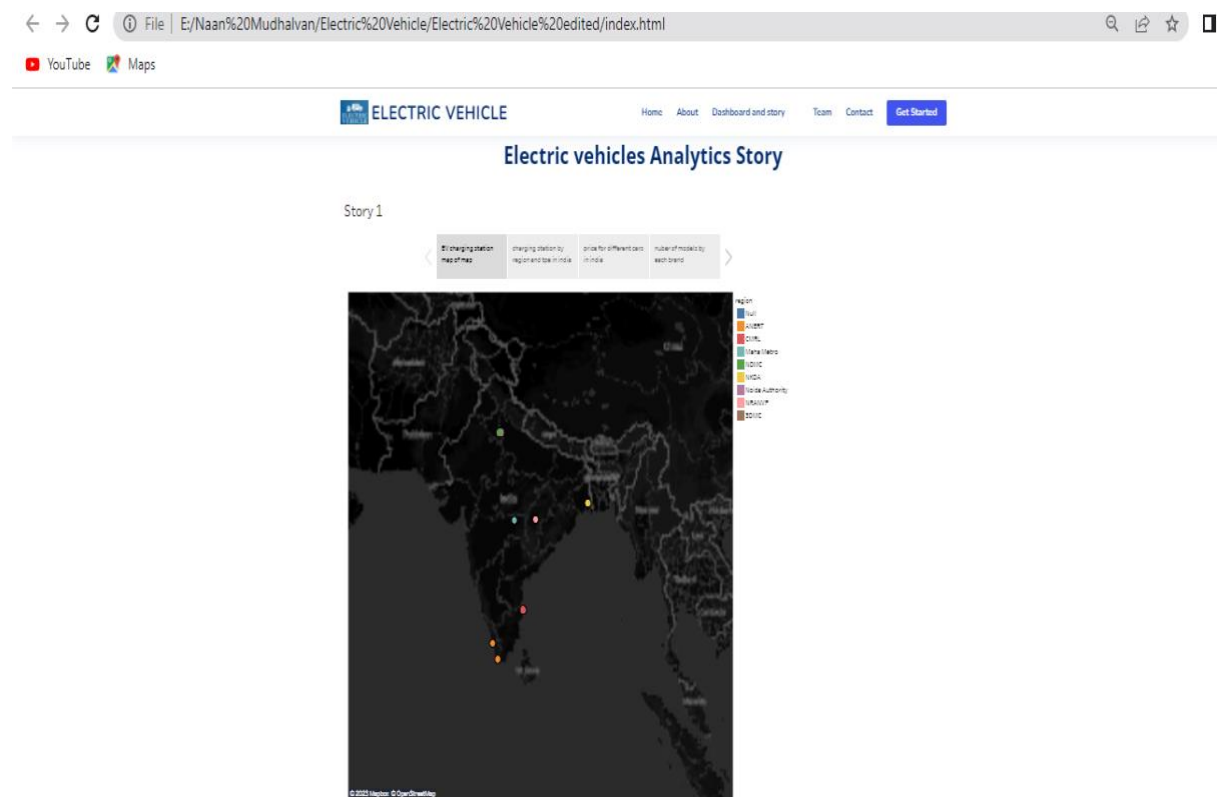
Home Page



Dashboard



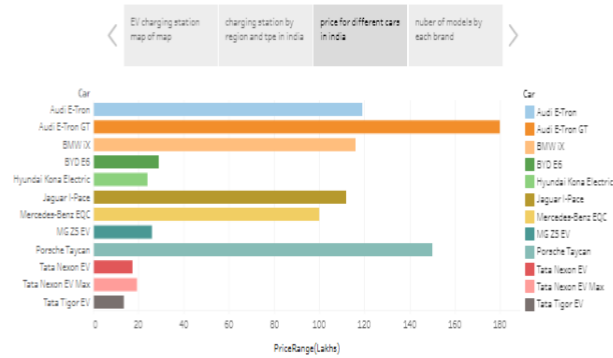
Story



STORY

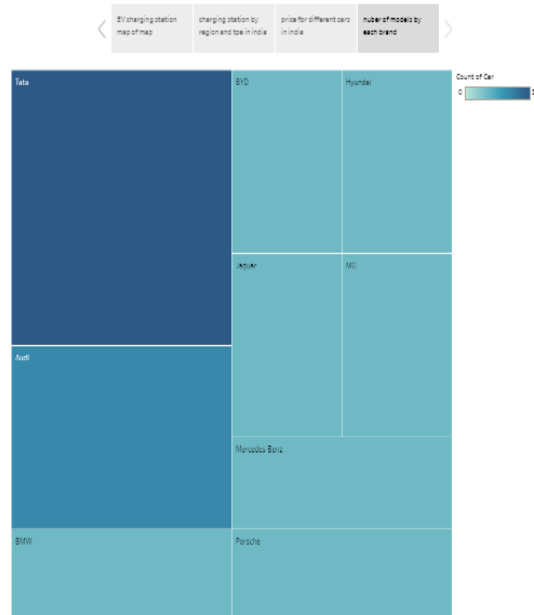
Electric vehicles Analytics Story

Story 1



Electric vehicles Analytics Story

Story 1



4. ADVANTAGES AND DISADVANTAGES

Advantages

From the given dataset of EV charge and range analysis, we have some advantages to known about it.

- To know various charging station in India
- To know about the various brands of different EV cars in India
- To know about the top speed of various branded EV cars
- To know about price for different cars in India
- To know about the various body styles of EV cars.

Disadvantages

Range analysis through visualization have some disadvantages, that are;

- Use of poorly designed visual aids that are difficult to understand.
- We can analyse the data up to certain limited dataset.
- We can't get more information beyond datasets.
- For the usage of EV, there is not much more availability of charging stations.
- We can get top speed from all brands.

5. APPLICATIONS

- The usage of EV cars in Delhi is most is known by map.
- There were different types of EV cars available in various brands.
- EV provide top speed. In that, Honda having the highest speed among others.
- It is applicable to know the brand filtered by power train type.
- Topmost efficient EV brands were analysed.

6. CONCLUSION

We analysed the electric vehicle through data visualization and more details learnt about EV by creating dashboard, story, from that learnt various charging stations, various brands of EV cars, top speed, and price of different cars.

7. FUTURE SCOPE

While estimates ranged from more than 20% to almost 90%, executives in the study predicted that by 2030, 52 per cent of new car sales would be all-electric. Electric vehicles offer a strong potential to reduce emissions and aid in the fight against climate change. In many cases, they will most likely replace combustion engines.

The future of electric vehicles global market is expanding at a CAGR of 21.7%, which is expected to continue. Growth from 8.1 million units is anticipated to reach 39.21 million by 2030. Multiple factors, including worries about pollution, are driving this rapid expansion.